

**Amendments to the Claims:**

This listing of the claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

- 1-23. (canceled)
24. (currently amended) A method of manufacturing a tissue matrix comprising seeding human placental stem cells into or onto a tissue matrix, wherein said placental stem cells comprise CD34<sup>-</sup> stem cells, and wherein said stem cells are from a human placenta that has been drained of cord blood and flushed perfused to remove residual blood, and wherein said CD34<sup>-</sup> stem cells are SSEA3<sup>-</sup>, SSEA4<sup>-</sup>, or OCT-4<sup>+</sup> or a combination thereof.
25. (previously presented) The method of claim 24, wherein said tissue matrix is an artificial tissue matrix.
26. (previously presented) The method of claim 24, wherein said tissue matrix is a tissue matrix produced from natural tissue.
27. (previously presented) The method of claim 24, wherein said tissue matrix is a decellularized tissue.
28. (previously presented) The method of claim 27, wherein said tissue is an organ or part of an organ.
29. (canceled)
30. (currently amended) The method of claim ~~[[29]]~~ 24, wherein said stem cells are CD10<sup>+</sup>, CD29<sup>+</sup>, ~~CD34<sup>-</sup>~~, CD44<sup>+</sup>, CD45<sup>-</sup>, CD54<sup>+</sup>, CD90<sup>+</sup>, SH2<sup>+</sup>, SH3<sup>+</sup>, or SH4<sup>+</sup>, or any combination of the foregoing.
31. (currently amended) The method of claim 24, ~~wherein said stem cells are~~ additionally comprising seeding CD34<sup>+</sup> human placental stem cells onto said tissue matrix.
32. (previously presented) The method of claim 24, wherein said stem cells are obtained from a placenta that has been perfused for at least 2 hours.
33. (previously presented) The method of claim 24, wherein said stem cells are obtained from a placenta that has been perfused for at least 12 hours.
34. (previously presented) The method of claim 24, wherein said stem cells are obtained from a placenta that has been perfused for at least 24 hours.
35. (previously presented) The method of claim 27, wherein said decellularized tissue is contacted with serum and fibronectin prior to said seeding.
36. (previously presented) The method of claim 35, wherein said decellularized tissue is additionally contacted with a glycosaminoglycan prior to said seeding.

37. (previously presented) The method of claim 36, wherein said glycosaminoglycan is heparin.
38. (previously presented) The method of claim 37, wherein said fibronectin and said heparin are present in a ratio of from about 0.1:1 to about 10:0.1 fibronectin:heparin.
39. (previously presented) The method of claim 24, wherein said stem cells are seeded by injection into said tissue.
40. (previously presented) The method of claim 24, wherein said stem cells are seeded through the tissue's vasculature.
41. (currently amended) A tissue matrix made according to the method of claim 25, ~~wherein said human placental stem cells comprise CD34<sup>-</sup> stem cells.~~
42. (currently amended) A tissue matrix made according to the method of claim 27, ~~wherein said human placental stem cells comprise CD34<sup>-</sup> stem cells.~~
43. (currently amended) A tissue matrix made according to the method of claim ~~[[38]] 28,~~ wherein said human placental stem cells comprise CD34<sup>-</sup> stem cells.
44. (currently amended) A tissue matrix made according to the method of claim 24, ~~wherein said human placental stem cells comprise CD34<sup>-</sup> stem cells.~~
45. (currently amended) A tissue matrix made according to the method of claim 26, ~~wherein said human placental stem cells comprise CD34<sup>-</sup> stem cells.~~
- 46.-50. (canceled)
51. (new) A tissue matrix made according to the method of claim 30.
52. (new) A tissue matrix comprising placental stem cells, wherein the placental stem are CD34<sup>-</sup> human placental stem cells that are SSEA3<sup>-</sup>, SSEA4<sup>-</sup>, or OCT-4<sup>+</sup> or a combination thereof.
53. (new) The tissue matrix of claim 51, wherein the placental stem cells are CD34<sup>-</sup>, SSEA3<sup>-</sup>, SSEA4<sup>-</sup>, and OCT-4<sup>+</sup>.
54. (new) The tissue matrix of claim 51, wherein the placental stem cells are CD10<sup>+</sup>, CD29<sup>+</sup>, CD44<sup>+</sup>, CD45<sup>-</sup>, CD54<sup>+</sup>, CD90<sup>+</sup>, SH2<sup>+</sup>, SH3<sup>+</sup>, or SH4<sup>+</sup> or a combination thereof.
55. (new) The tissue matrix of claim 51, wherein the placental stem cells are CD10<sup>+</sup>, CD29<sup>+</sup>, CD44<sup>+</sup>, CD45<sup>-</sup>, CD54<sup>+</sup>, CD90<sup>+</sup>, SH2<sup>+</sup>, SH3<sup>+</sup>, and SH4<sup>+</sup>.
56. (new) The method of claim 24, wherein said placental stem cells are CD34<sup>-</sup>, SSEA3<sup>-</sup>, SSEA4<sup>-</sup>, and OCT-4<sup>+</sup>.
57. (new) The method of claim 24, wherein said placental stem cells are CD10<sup>+</sup>, CD29<sup>+</sup>, CD44<sup>+</sup>, CD45<sup>-</sup>, CD54<sup>+</sup>, CD90<sup>+</sup>, SH2<sup>+</sup>, SH3<sup>+</sup>, and SH4<sup>+</sup>.